ALERT Systems

Automated Local Flood Warning Systems Handbook
(Weather Service Hydrology Handbook No. 2)

Automated Local Evaluation in Real-Time (ALERT) was developed by the National Weather Service in the 1970's. It is intended to be a local flood warning system for a local agency (such as a county or a city). ALERT systems are fairly low cost, and provide important real-time rainfall and flow/stage information to evaluate the potential for flooding. ALERT systems are locally owned and operated, but the NWS provides technical support.

The above reference contains guidelines for NWS activity related to ALERT networks, including detailed instructions on requesting radio frequencies. Hydrology Program Managers who are approached concerning ALERT networks are encouraged to use this reference as guidance.

One of the main components of the ALERT sensor (depicted to the left) is the tipping bucket rain gauge. Each time it tips, the bucket triggers a radio message to the base station, providing real-time precipitation accumulation. ALERT sensors may also be equipped with water level sensors, temperature sensors, and wind sensors.

ALERT systems rely on line-of-sight radio communications between the sensor site and the base station. Often radio repeaters are used to allow the radio signal to reach the base station. The radio frequencies of many ALERT networks are owned by the NWS. Agreements between local agencies and the NWS are required before these frequencies are obtained. The NWS must receive data in near real-time for it's frequencies to be used by an ALERT network.

ALERT systems are used across most of the western United States, but they are most heavily used in California and Arizona.

ALERT users groups have been established across the country. More information about these groups can be found on the Internet at:

http://www.alertsystems.org/.